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Mesoporous inorganic nanoscale particles for drug adsorption and controlled release

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Abstract

© 2018 Newlands Press. The review provides an overview of the mesoporous inorganic particles employed as drug delivery systems for controlled and sustained release of drugs. We have classified promising nanomaterials for drug delivery on the basis of their natural or synthetic origin. Nanoclays are available in different morphologies (nanotubes, nanoplates and nanofibers) and they are typically available at low cost from natural resources. The surface chemistry of nanoclays is versatile for targeted modifications to control loading and release properties. Synthetic nanomaterials (imogolite, laponite and mesoporous silica) present the advantages of well-established purity and availability with size features that are finely controlled. Both nanoclays and inorganic synthetic nanoparticles can be functionalized forming organic/inorganic architectures with stimuli-responsive features.

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Keywords

delivery systems, halloysite, mesoporous silica, nanoclays

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